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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/580,452

03/27/2007

Yasuji Ogawa

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EXAMINER

DAVIS, OCTAVIA L

ART UNIT

PAPER NUMBER

2855

MAIL DATE

DELIVERY MODE

01/21/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/580,452	OGAWA, YASUJI	
	<b>Examiner</b>	<b>Art Unit</b>	
	OCTAVIA DAVIS	2855	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 9/15/08.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 15-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 15-20 is/are rejected.
- 7) ☒ Claim(s) 21-27 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>9/15/08</u> .   | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Claim Objections*

1. Claims 21 – 27 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim should refer to other claims in the alternative only and cannot depend from any other multiple dependent claim. See MPEP § 608.01(n). Accordingly, the claims have not been further treated on the merits.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 15 - 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsala (4,918,418) in view of Frick et al (4,944,187), Murakami et al (4,658,373) and Weber (3,722,288).

Regarding claims 15 and 17 - 20, Tsala discloses an apparatus for use with torque sensors comprising means for determining and minimizing stress, a sensor section including first coils 30 and second coils 32, cushion members 33, 34, 35 between the coils, a third coil and a fourth coil are provided (See Col. 3, lines 27 – 37 and Col. 5, lines 18 – 21 and 46 - 57), a drive circuit 22 that drives the coils 30 (See Col. 7, lines 29 – 31), a differential amplifier amplifies a voltage signal across the coils 32 as a result of the stress on the shaft (See Col. 8, lines 66 - 67 and Col. 9, lines 1 - 5), the

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drive circuit including current drivers 66 and further amplifiers 82, 130 (See Col. 9, lines 38 – 45 and Col. 10, lines 34 – 39), a current sensor 68 or current sensor resistor whose output is rectified by an op amp (See Col. 10, lines 15 - 19), each of the coils in the coil row is planar with a round shape and are connected in series at their respective central portions (See Col. 5, lines 1 – 11, See Fig. 3) and the plurality of sensors situated in a matrix-like configuration, forming the first coils into a plurality of coil rows connected in series in the X-axis direction and forming the second coils into a plurality of coil rows in series in the Y-axis direction and forming the third coils into a plurality of coil rows connected in series in the X-axis direction (See Fig. 4), the coils connected to the drive circuit 22 (See Figs. 5B, 5C and 7) and a central portion of the coil being hollow (See Fig. 5B) but does not disclose that a second cushion member is provided between the second coils and the third coils, the cushions having a different modulus of elasticity and detecting signals and the difference in signals based on electromagnetic coupling. However, Frick et al disclose a multi-modulus pressure sensor comprising a sensing member 35 that utilizes two layers, sheets or materials having different elastic moduli and having an interface along which the two separate materials are made to be integral (See Col. 5, lines 37 – 40). Murakami et al disclose a position detector including force detection means (See Col. 4, lines 18 – 25), first and second coils 5, 5a-5d that make signal exchange therebetween through magnetostrictive medium elements 1a-1d resulting in an electromagnetic coupling that is maximized (See Col. 5, lines 33 – 45 and Col. 6, lines 22 – 24). Weber discloses an electromagnetic coupling detector comprising a force transducer having three coils 503, 505, 507, a first member 509 disposed between the first coil 503 and the second coil 505 and a second member 511 disposed between the second coil 505 and the third coil 507 (See Col. 19, lines 18 – 43).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Tsala according to the teachings of Frick et al, Murakami and Weber

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for the purposes of, analyzing materials having different characteristics that will react differently to pressure to perform a comparison (See Frick et al, Col. 1, lines 33 – 37) and advantageously reducing the voltage produced by the electromagnetic coupling between a plurality of coils (See Murakami, Col. 2, lines 41 – 45) and advantageously providing an adequate method for signaling between two acoustically and electromagnetically isolated points through dynamic gravitational interactions (See Weber, Col. 2, lines 53 – 56).

Regarding claim 16, Tsala, Frick et al and Weber disclose all of the limitations of these claims except that the coils are wired such that they counteract a magnetic field and a switching means for connecting and disconnecting the rows one end of the respective coils rows being grounded. However, in Murakami et al, the coils are arranged in a matrix-like manner forming coil rows 5 and coil columns 13a-13d (See Figs. 1, 4 and 6), the coils are wiredly connected (See Col. 8, lines 40 - 47, See Fig. 6), switches 60, 62 are provided that switch the operation of the X,Y directions of coiled matrix (See Col. 9, lines 5 – 12), wherein one end of the coil rows is connected to ground (See Fig. 5).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Tsala, Frick et al and Weber according to the teachings of Murakami for the purpose of, advantageously detecting a position in both X and Y directions (See Murakami, Col. 1, lines 66 – 67).

### ***Response to Arguments***

4. Applicant's arguments with respect to these claims have been considered but are moot in view of the new grounds of rejection. In response to applicant's argument that the references do not disclose forming the first coils into a plurality of coil rows connected in series in the direction of the

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X-axis, respectively, and forming the second coils into a plurality of coil rows connected in series in the direction of the Y-axis, respectively, it is the examiner's position that in Tsala, the coils 32X are connected in series X-direction (See Col. 3, lines 41 - 48, See Fig. 4) and the coils 32Y are connected in series in the Y-direction (See Col. 7, lines 59 – 61, See Fig. 7), thus the references still stand.

### ***Conclusion***

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Octavia Davis whose telephone number is 571-272-2176. The examiner can normally be reached on Mondays through Thursdays from 9 to 5. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harshad Patel, can be reached on 571-272-2187. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Harshad Patel/  
Primary Examiner, Art Unit 2855

OD/2855  
1/14/09